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DERWENT-ACC-NO: 1992-081201
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TITLE: Compensating dimensional variations in NC or CNC machine - determining
workpiece deviation using e.g. laser beam and detectors and calculating corrected
machine settings for all degrees of freedom

INVENTOR: PFEIFFER, W; SCHMID, R

PATENT-ASSIGNEE:
ASSIGNEE   CODE
MESSERSCHMITT-BOLKOW-BLO   MESR
DEUT AEROSPACE AG   DAIM

PRIORITY-DATA: 1990DE-4028006 (September 4, 1990)

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PATENT-FAMILY:

	PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
☐	DE 4028006 A	March 5, 1992		000	
☐	DE 4028006 C2	April 14, 1994		005	G05B019/18

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE 4028006A	September 4, 1990	1990DE-4028006	
DE 4028006C2	September 4, 1990	1990DE-4028006	

INT-CL (IPC): B23Q 15/00; G01B 11/02; G05B 19/18; G05B 19/403

ABSTRACTED-PUB-NO: DE 4028006A
BASIC-ABSTRACT:

An NL machine tool of a vertical milling type has a vertical machine frame (3) that
supports the headstock (4). The cutter removes material from the component which is
moved in X, Y and Z planes.

The machine frame is fitted with detectors (7, 8) that monitor the deflections that
occur which result in the surface of the workpiece being angled. The detector
signals are used to calculate a correction that is applied to the position command
values. The detectors pref. detect the position of a laser beam.

ADVANTAGE - Provides compensation for thermal effects and deformation due to static or dynamic forces etc.
ABSTRACTED-PUB-NO:

DE 4028006C
EQUIVALENT-ABSTRACTS:

The method of compensating measurement errors (deviations) of numerically controlled (NC) or CNC machine tools involves initially establishing the travel (traverse) and infeed movements of the machine tool for processing a workpiece, followed by calculating modified traverse and infeed movements of the machine tool in all degrees of freedom in order to manufacture the workpiece with the required dimensions.

Positional sensitive detectors (7, 8) are used to measure the values of the measurement errors of the machine tool, from which values are calculated the correction values (deltax(z), deltay(z)) for the discrete degrees of freedom of the machine tool. The modified traverse and infeed movements are generated so that the movements with calculated correction values (deltax(z), deltay(z)), as established by a parts programme, are combined with sign correction.

ADVANTAGE - Simplified compensation of all measured errors or deviations for machine tools.

CHOSEN-DRAWING: Dwg.5/6 Dwg.5/6

TITLE-TERMS: COMPENSATE DIMENSION VARIATION NC CNC MACHINE DETERMINE WORKPIECE DEVIATE LASER BEAM DETECT CALCULATE CORRECT MACHINE SET DEGREE FREE

DERWENT-CLASS: P56 R11 R26 S02 T06 X25

EPI-CODES: S02-A03B2; S02-A07; T06-A04A; T06-D07A; X25-A03C1;

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